

# **Mattawoman Creek**

## ***Shellfish***

### **Total Maximum Daily Load**

Public Meeting  
February 3, 2010



### ***Public comment information***

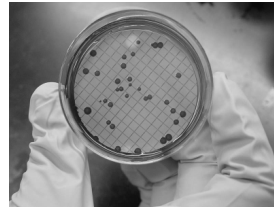
- Comment period ends on...
  - **March 4, 2010**
- Send comments to:
  - Jennifer Howell, VA DEQ
  - 5636 Southern Blvd
  - Virginia Beach, VA 23462
  - Phone: (757) 518-2111
  - Fax: (757) 518-2003
  - Email:  
[jennifer.howell@deq.virginia.gov](mailto:jennifer.howell@deq.virginia.gov)



## *Shellfish Use*

Pollutant of concern: fecal coliform

- Found in **digestive tract of warm blooded animals** such as humans, pets, livestock and wildlife
- Presence in water samples is a strong indicator of recent **sewage or animal waste contamination**
- Strong correlation between bacteria concentrations and **gastrointestinal illnesses**

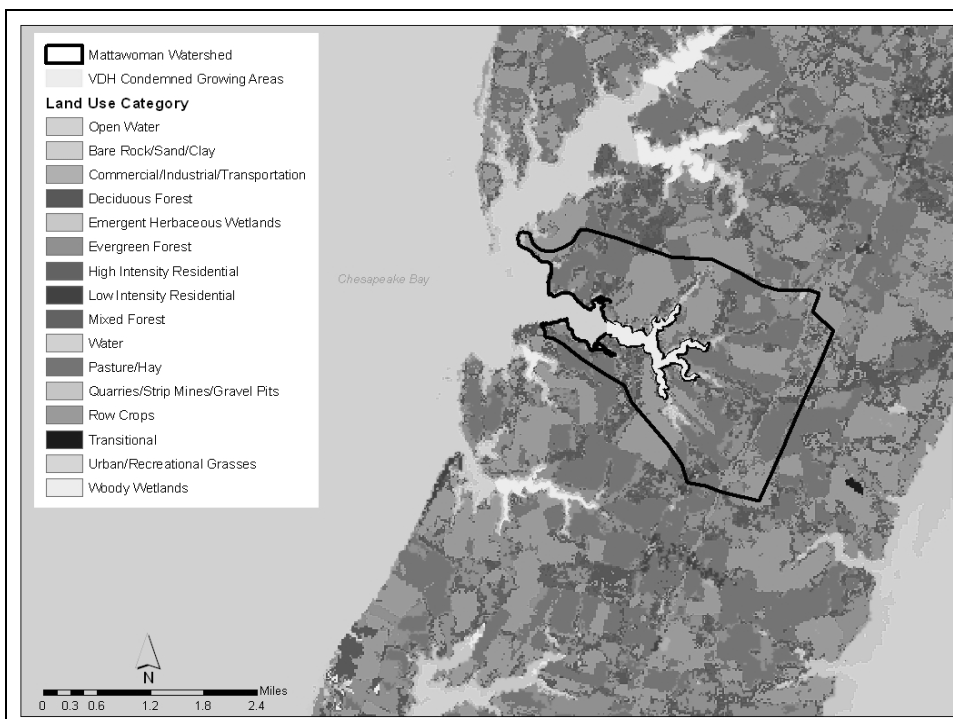


## *Water Quality Standards*

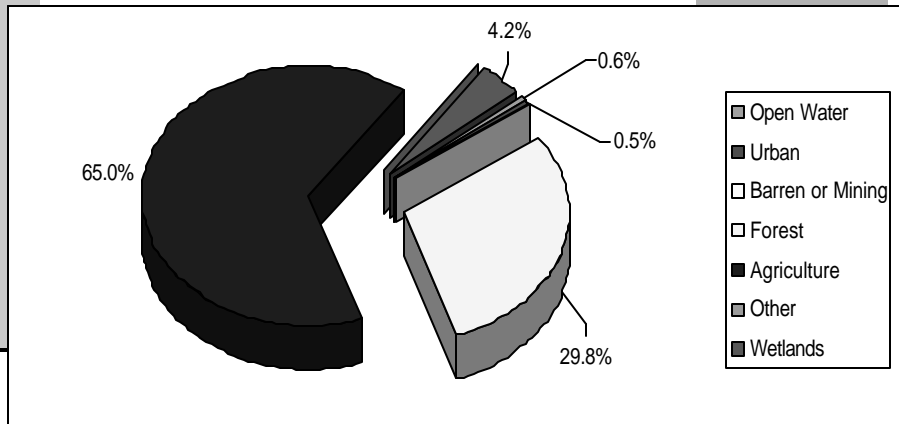
Shellfish Use Standard:



- Fecal coliform
  - 14 cfu/100ml (geometric mean: applies to 2 or more samples obtained in 1 calendar month)
  - 49 cfu/100mL (90<sup>th</sup> percentile)

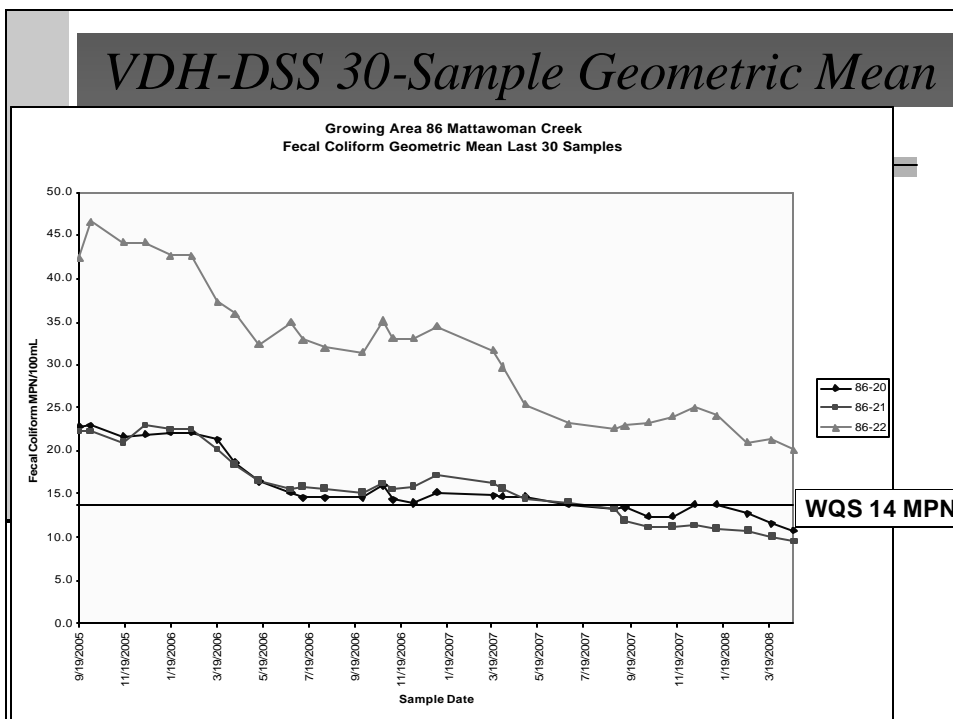
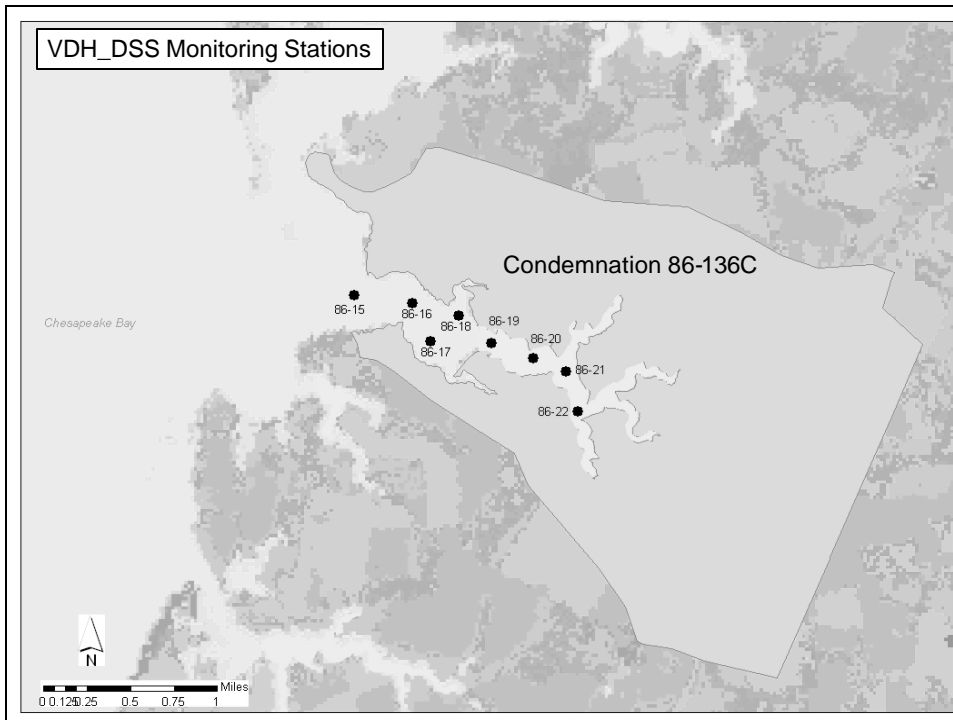


## Land Use Distribution

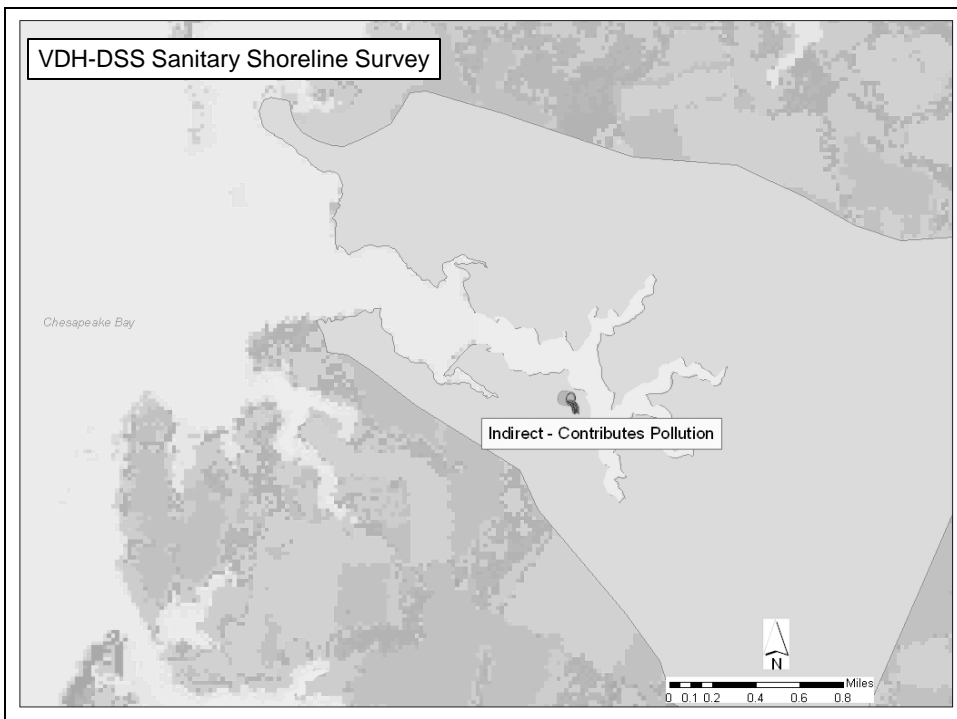
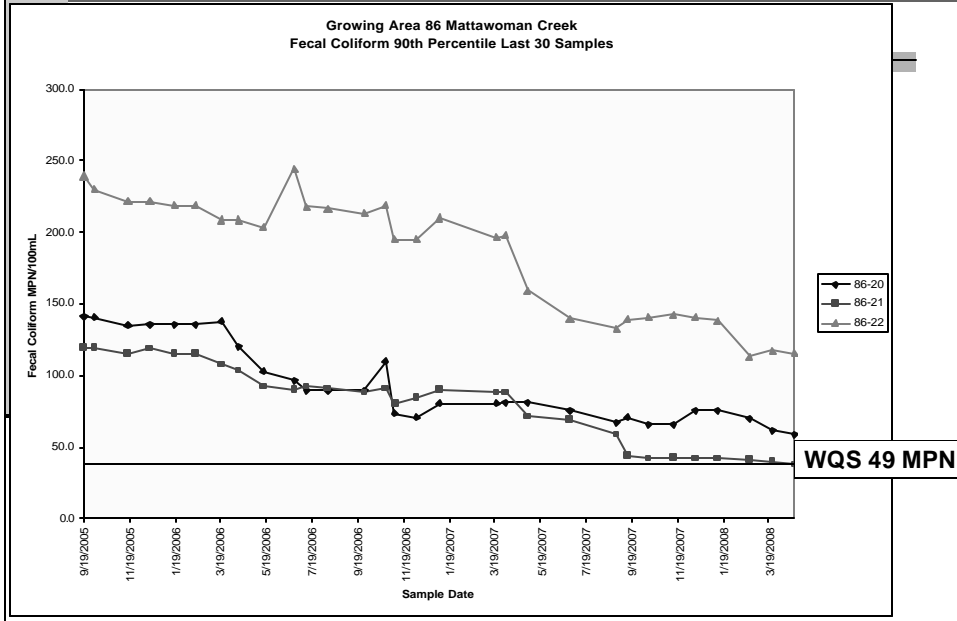


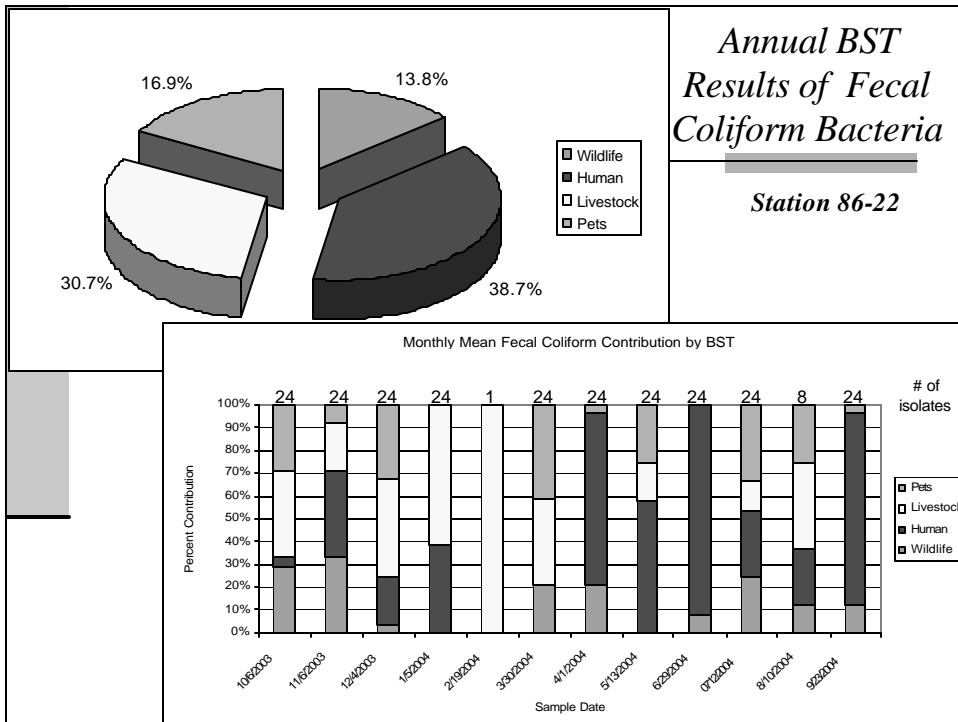
Watershed size: 3511.53 acres

General Land Use Category	Land Use	Acres	Percent of Watershed
Developed 0.45%	Low-intensity residential	7.43	0.21
	High-intensity residential	0	0
	Commercial/Industrial	8.41	0.24
Undeveloped 33.96%	Deciduous forest	260.57	7.42
	Evergreen forest	526.47	14.99
	Mixed forest	257.92	7.34
	Woody wetlands	0	0
	Emergent-herbaceous wetlands	147.66	4.20
	Bare rock/Sand/Clay	0	0
Agriculture 64.95%	Pasture/Hay	1229.75	35.02
	Row crops	1051.07	29.93
Transitional		0	0
Water		22.25	0.63
<b>Total</b>		<b>3511.53</b>	<b>100</b>



# VDH-DSS 30-Sample 90<sup>th</sup> Percentile





Estimated Fecal Coliform Source Populations		
Fecal Coliform Source		Estimated Populations
Livestock	Cattle	13
	Chicken	3
	Pig	7
	Horse	6
Wildlife	Deer	174
	Raccoon	107
	Geese	182
	Duck	263
Pet	Dog	80
Human	Failing Septic*	15

\* Failing septic systems are based on the number of houses in the watershed, year houses were built, and the number of deficiencies identified in the VDH-DSS Shoreline Sanitary Survey

*Current Loads and Estimated Load Reductions  
Based upon the Geometric Mean Standard*

Source	BST Allocation (% of Total Load)	Current Load (MPN/day)	Allowable Load (MPN/day)	Required Reduction (%)
Livestock	31	3.38E+10	8.54E+09	75
Wildlife	14	1.53E+10	1.53E+10	0
Human	38	4.14E+10	0.00E+00	100
Pets	17	1.85E+10	8.54E+09	54
Point Source	-	-	3.27E+08	0
<b>Total</b>	<b>100.0</b>	<b>3.67E+10</b>	<b>3.27E+10</b>	70.0

Waste Load Allocations are represented as 1% of the calculated Total Maximum Daily Load to allow for future growth since there are no individual VPDES permitted discharge facilities with bacteria effluent limitations in the watershed

*Current Loads and Estimated Load Reductions  
Based upon the 90<sup>th</sup> Percentile Standard\**

Source	BST Allocation (% of Total Load)	Current Load (MPN/day)	Allowable Load (MPN/day)	Required Reduction (%)
Livestock	31	1.73E+11	1.78E+10	90
Wildlife	14	7.83E+10	7.83E+10	0
Human	38	2.12E+11	0.00E+00	100
Pets	17	9.50E+10	1.79E+10	81
Point Source	-	-	1.15E+09	0
<b>Total</b>	<b>100.0</b>	<b>5.59E+11</b>	<b>1.15E+11</b>	79.4

Waste Load Allocations are represented as 1% of the calculated Total Maximum Daily Load to allow for future growth since there are no individual VPDES permitted discharge facilities with bacteria effluent limitations in the watershed



### *TMDL Summary Based on the Geometric Mean Standard*

Condemnation Area	WLA (Point Sources)	LA (Non-point Sources)	MOS (Margin of Safety)	TMDL
Mattawoman Creek 86-136C (VAT-C14E-13)	3.27E+08	3.24E+10	Implicit	3.27E+10

### *TMDL Summary Based on the 90<sup>th</sup> Percentile Standard\**

Condemnation Area	WLA (Point Sources)	LA (Non-point Sources)	MOS (Margin of Safety)	TMDL
Mattawoman Creek 86-136C (VAT-C14E-13)	1.15E+09	1.14E+11	Implicit	1.15E+11

## *Contact Information*

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**TMDL information:** [www.deq.virginia.gov/tmdl](http://www.deq.virginia.gov/tmdl)

**WQ Assessment:** [www.deq.virginia.gov/wqa](http://www.deq.virginia.gov/wqa)